APR 22 1996

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National Aeronautics
and Space Administration

CONTIN

April 5, 1996
NRA 96-OSS-07

RESEARCH ANNOUNCEMENT

INFRARED, SUBMILLIMETER, AND RADIO ASTRONOMY RESEARCH AND ANALYSIS PROGRAM

CONSOLIDATED SOLICITATION FOR:

- **DETECTOR AND INSTRUMENT TECHNOLOGY DEVELOPMENT**
- **BALLOON- AND ROCKET-BASED OBSERVATIONS**
- **LABORATORY ASTROPHYSICS**

Letters of Intent Due: May 10, 1996

Proposals Due: July 5, 1996

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96-020281

OMB Approval No. 2700-0087

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NASA Research Announcement
Soliciting Proposals
for the
Infrared, Submillimeter, and Radio Astronomy
Research and Analysis Program
for the Period
Fiscal Year 1997 to Fiscal Year 1999

NRA 96-OSS-07
Issued: April 5, 1996
Proposals Due: July 5, 1996

Office of Space Science
National Aeronautics and Space Administration
Washington, DC 20546

THE INFRARED, SUBMILLIMETER, AND RADIO ASTRONOMY RESEARCH AND ANALYSIS PROGRAM

This NASA Research Announcement (NRA) solicits basic research proposals to conduct investigations that are relevant to NASA's program in Infrared, Submillimeter, and Radio (ISR) Astronomy. The primary goals of the ISR Astronomy program are to obtain a better understanding of the evolution and origins of astronomical objects, as revealed through their long wavelength radiation characteristics, and to develop and demonstrate advanced sensor and instrument technologies. The range of wavelengths covered by the ISR Astronomy program spans the three decades from the near infrared to the millimeter regime in those areas of direct interest to NASA's space program, and also extends several decades into the radio spectrum. The purpose of the ISR Research and Analysis (R&A) program is to provide research and technology development in support of ongoing and future ISR Astronomy flight programs. This NRA specifically encompasses support in all relevant areas of the ISR R&A programs: (i) detector and instrument technology development, (ii) balloon-based observations, (iii) sounding rocket observations, and (iv) laboratory astrophysics. It is presently expected these ISR Astronomy R&A areas will be funded at an annual level of about $5 million.

Participation in this program is open to all categories of domestic and foreign organizations, including educational institutions and other nonprofit organizations, corporations, NASA Centers, and other Government agencies. Any foreign participation will be on a no-exchange of funds basis. Proposals may be submitted at any time during the period ending July 5, 1996, and will be evaluated by scientific peer review panels in August 1996.

Further information relevant to this program is included in the Appendices listed below. **Appendix A** provides additional details pertinent to the Infrared, Submillimeter, and Radio Astronomy Research and Analysis Program. **Appendix B** contains the general guidelines for responding to any NASA Research Announcement. **Appendix C** provides additional guidelines for the preparation of proposals in response to this partcular NRA, and a description of the evaluation and selection process. **Appendix D** provides a compilation of relevant NASA flight programs and collaborative international programs in ISR astronomy. **Appendix E** lists some of the typical research topics currently supported in program areas pertinent to this NRA. **Appendix F** contains various forms that must be included in all proposals submitted in response to this NRA.

Prospective offerors are encouraged to retrieve electronic versions of the Appendices via anonymous file-transfer-protocol or through the World Wide Web. In the case of file-transfer-protocol, one should type the command "ftp ftp.hq.nasa.gov" from your host machine. The user will be prompted to enter a user name (use "anonymous") and a password (use your own host name). The Appendices are available in three formats -- ASCII, Postscript, and Microsoft Word -- and may be found in the directory "/pub/astrophysics/NRAs/ISR/96-OSS-07." A file named "README.txt" resides in this directory and provides detailed instructions on obtaining the necessary files electronically. Those seeking the Appendices via the Web should access the following URL address listed within the quotation marks (excluding the final period): "http://www.hq.nasa.gov/pub/astrophysics/NRAs/ISR/96-OSS-07."

Hardcopy (paper) versions may be requested by regular mail, electronic mail, or by telephone. Questions regarding the possible suitability or relevance of a candidate program may be forwarded to the Program Scientist listed below.

Identifier: NRA 96-OSS-07

Requests for Additional Information and Appendices:

Dr. Michael D. Bicay
Research Program Management Division
Code SR
NASA Headquarters
300 E Street SW
Washington, DC 20546-0001 USA
Phone: 202-358-0376
Email: mbicay@hq.nasa.gov

Submit Letters of Intent to Propose to: See above.

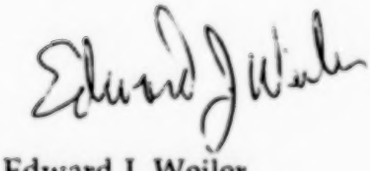
Electronic Retrieval of NRA

- "anonymous ftp" site ftp.hq.nasa.gov/pub/astrophysics/NRAs/ISR/96-OSS-07
- World Wide Web http://www.hq.nasa.gov/pub/astrophysics/NRAs/ISR/96-OSS-07

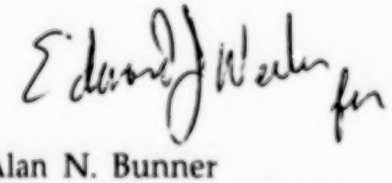
Submit Letters of Intent by: May 10, 1996

Submit Proposals to:	Infrared, Submillimeter, and Radio Astronomy R&A Program Code SR-2 400 Virginia Avenue SW, Suite 700 Washington, DC 20024 ATTN: Ms. Susan Borden *Phone:* 202-554-2775 (x 114)
Submit Proposals by:	July 5, 1996
Number Required:	20 copies (including proposal with original signatures)
Selecting Official:	Director, Research Program Management Division Office of Space Science NASA Headquarters

Your interest and cooperation in participating in this effort are appreciated.



Edward J. Weiler
Science Program Director
Astronomical Search for Origins
and Planetary Systems
Office of Space Science



Alan N. Bunner
Science Program Director
Structure and Evolution of the Universe
Office of Space Science

NASA Research Announcement (NRA) Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

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Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)
- ☐ 2. Announcements of Opportunity (specific space fight mission)

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- ☐ 1. Please ***add*** my name to the mailing list.
- ☐ 2. Please ***remove*** my name from the mailing list (please attach mailing label)
- ☐ 3. Please ***update*** my current listing.

CONTACT INFORMATION If your address has changed or your mailing label is incorrect, please provide ***COMPLETE*** contact information.

Code Number: (obtain from mailing label) | Salutation: (Mr.,Mrs.,Ms.,Dr.,Prof.,etc.) | Suffix (Ret.,PhD.,Jr.,III,etc.)

First Name: | MI: | Last Name:

Organization:

Division / Department:

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City: | State: | Zip:

Telephone No: | Fax No:

E-Mail Address: _____ Internet Address: _____

Country: (foreign addresses, please specify)

Institution Type

(check only those that apply)

- ☐ 1. College or University
- ☐ 2. Minority College or University
- ☐ 3. Foreign Addressee
- ☐ 4. Minority Business
- ☐ 5. NASA HQs/Center
- ☐ 6. Nonprofit Corporation
- ☐ 7. Other Government Agency
- ☐ 8. Private Industry
- ☐ 9. Small Business

Societies:

- ☐ A. American Astronomical Society
- ☐ B. American Geophysical Union
- ☐ C. Others _____

Discipline:

(check only those that apply) (MUST CHECK AT LEAST ONE)

1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
- ☐ B. Instrumentation (Technology Dev)
- ☐ C. Laboratory Astrophysics
- ☐ D. Data Analysis (Archival)
- ☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
- ☐ B. Planetary Materials and Geochemistry
- ☐ C. Planetary Geology and Geophysics
- ☐ D. Instrument Development
- ☐ E. Origins of Solar Systems
- ☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
- ☐ B. Solar Physics
- ☐ C. Magnetospheric Physics
- ☐ D. Iono-Thermo-Mesospheric Physics

4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking
- ☐ B. Scientific Data Analysis and Visualization
- ☐ C. Science Data Storage and Management
- ☐ D. Software Technology

SPI
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END

10-18-96